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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Bryan V. Hunt, et al.

PHOTOTHERMOGRAPHIC
MATERIALS WITH IMPROVED
IMAGE TONE

Serial No. 10/686,806

Filed 16 October 2003

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Sir:

Group Art Unit: 1752

Examiner: Chea, Thorl

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Sherryl A. Payne
Sherryl A. Payne

May 18, 2006
Date

DECLARATION UNDER 37 C.F.R. 1.132

I, Bryan V. Hunt, declare that:

(1) I am a co-inventor of the invention described and claimed in the present application, along with Lilia P. Burleva and Mark C. Skinner.

(2) I received a B.S. degree in Chemical Engineering from the University of Minnesota in 1992.

(3) From April 1992 to July 1996, I was employed by 3M Company; from July 1996 to December 1998, I was employed by Imation Corporation; and from December 1998 to the present, I have been employed by Eastman Kodak Company, all in facilities located near St. Paul, Minnesota.

(4) During my employment with 3M Company, Imation Corporation, and Eastman Kodak Company, I have been involved in research and development work in the area of imaging science and materials, and particularly in research and development of photothermographic materials and products. In the course of that work, I have been an inventor or co-inventor of at least 11

inventions that are the subject of granted U.S. patents, pending U.S. patent applications, or published patent applications in other countries.

(5) In view of this academic and professional technical experience, I can say, with appropriate modesty, that I am a worker having at least ordinary skill in the art to which the present invention pertains, namely photothermography including photothermographic materials, components used therein, and imaging methods.

(6) I am familiar with the Office Action dated February 24, 2006 that has been received during the prosecution of the present application, and the art cited therein, and I believe that I understand the Examiner's arguments in support of his rejections of the presently claimed invention.

(7) I am familiar with WO 96/15479 (Geisler et al.) and its teachings relating to the incorporation of Dye 1 in the topcoat layer and its migration into the photothermographic emulsion layer during coating and drying. I am also familiar with the formulations used in WO 96/15479, having worked with these formulations and the inventors during my career.

Based on my intimate knowledge of these formulations, I can say with reasonable certainty that the materials of Example 4 of WO 96/15479, after processing, did not meet the color tone requirements of the claimed invention.

I also compared the composition of Example 4 of WO 96/15479 with both the Comparative and Inventive Examples of the present application. I believe that the data presented below unequivocally demonstrate that Example 4 of WO 96/15479 is most similar to that of the Comparative Examples and would therefore not be expected to have tone characteristics such that the value of b^* for the imaged and heat-processed photothermographic material at an optical density of 1.0 is greater than its value for b^* at D_{min} .

Each of the Inventive Examples contains the following materials.

- 1) Each uses an indolenine acutance dye (AD-1).
- 2) Each has an absorbance in the imaging layer of at least 1.0 at the exposure wavelength.

- 3) Each uses greater than 1.0 parts of 2-(tribromomethylsulfonyl)pyridine [BSP] in the imaging layer.
- 4) Each uses less than 0.7 parts of 4-methylphthalic acid [4-MPA] in the imaging layer.
- 5) Each uses either chemical sensitizer OSC-1 (Inventive Examples 1, 3, and 4) or greater than 0.4 parts benzotriazole [BZT] (Inventive Example 2).

All of the Comparative Examples are missing three or more of the above formulation materials.

Example 4 of WO 96/15479 is missing all five of the above formulation materials.

- 1) Example 4 of WO 96/15479 does not use an indolenine acutance dye, but uses the same acutance dye (CD-1) as Comparative Example D.
- 2) Example 4 of WO 96/15479 does not have an absorbance in the imaging layer of at least 1.0 at the exposure wavelength. The topcoat formulation and coating weight of Acutance Dye CD-1 described in Example 4 of WO 96/15479 would produce an imaging layer with an absorbance of about 0.8 at the exposure wavelength. This is very similar to the absorbance at the exposure wavelength determined in Comparative Examples D and F. The absorbance of the imaging layer of Comparative Example D was measured and found to be 0.58 at the imaging wavelength.
- 3) Example 4 of WO 96/15479 uses the same Antifoggant A as Comparative Example D. It does not use 2-(tribromomethylsulfonyl)pyridine, as described in all the Inventive Examples.
- 4) Example 4 of WO 96/15479 uses 4-methylphthalic acid in the topcoat, and after it migrated into the imaging layer during simultaneous coating, it would be at a level greater than the equivalent of 0.7 parts in our Inventive Examples. This is most like Comparative Examples E and F.
- 5) Example 4 of WO 96/15479 uses neither chemical sensitizer OSC-1, nor more than 0.4 parts BZT. This is most like Comparative Examples E and F.

Thus, Example 4 of WO 96/15479 is most similar to Comparative Examples D, E, and F. TABLE I below summarizes these similarities and differences.

Based on the data presented, as well as my intimate knowledge of these materials, I am confident that the materials of Example 4 of WO 96/15479,

after processing, would not inherently meet the color tone requirements of the claimed invention because the photothermographic material of Example 4 of WO 96/15479 is more similar to the materials of the Comparative Examples, rather than to the materials of the Inventive Examples in the present application. I further believe that one reasonably skilled in the art would also conclude that Example 4 of WO 96/15479 inherently would have tone characteristics more like the materials of the Comparative Examples, and not like the materials of the Inventive Examples of the present application. I believe that this demonstrates that the presently claimed invention is neither anticipated by, nor obvious over WO 96/15479.

TABLE I

Sample	Acutance Dye	Imaging Layer Absorbance	Antifoggant (parts)	4MPA ^{***} (parts)	Sulfur Sensitization	BZT (parts)
Example 4 of WO 96/15479	Squaraine CD-1	0.8 [*]	Antifoggant A 1.3 [*]	1.1 [*]	No	0
Comparative Example D	Squaraine CD-1	0.58	Antifoggant A 1.3	0.60	No	0.71
Comparative Example E	Indolenine AD-1	1.05	BSP ^{**}	0.72	No	0.36
Comparative Example F	Indolenine AD-1	0.82	BSP ^{**}	0.72	No	0.36
Inventive Example 1	Indolenine AD-1	1.05	BSP ^{**}	0.60	Yes	0.36
Inventive Example 2	Indolenine AD-1	1.05	BSP ^{**}	0.60	No	0.71
Inventive Example 3	Indolenine AD-1	1.05	BSP ^{**}	0.60	Yes	0.36
Inventive Example 4	Indolenine AD-1	1.05	BSP ^{**}	0.60	Yes	0.36

^{*} Calculated equivalents relative to our application, based on ratio to silver soap, and/or coating weights provided.

^{**} BSP is 2-(tribromomethylsulfonyl)pyridine.

^{***} 4MPA is 4-methylphthalic acid.

(8) That all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true. These statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Date: May 8, 2006

Bryan V. Hunt
Bryan V. Hunt